

AMENDMENTS TO THE CLAIMS

Claims 1-43 (Canceled)

Claim 44 (Currently Amended) An apparatus for polishing a substrate, comprising:

a substrate carrier having a lower surface for holding a substrate and bringing the substrate into contact with a polishing surface;

a polishing table having said polishing surface, the diameter of which is substantially 1.5 times the diameter of the lower surface of said substrate carrier;

a pivotal shaft for rotatably supporting the substrate carrier for movement to and from a polishing position, in which polishing position said substrate carrier is positioned such that a portion of the lower surface of the substrate carrier extends radially outwardly of the outer peripheral portion of said polishing table;

an attitude control mechanism for keeping said lower surface of said substrate carrier parallel with said polishing surface, said attitude control mechanism being operable to calculate a force applied to said substrate carrier based on a rotational moment and a direction of frictional force acting on said substrate carrier and a contact area where the substrate contracts said polishing surface;

a liquid supply nozzle for supplying a first polishing liquid during a polishing process of a first layer, and for supplying a second polishing liquid while polishing a second layer;

a first nozzle for providing water toward said polishing surface for cleaning said polishing surface after polishing the first layer and before polishing the second layer;

a thickness measurement device for determining an end point of said polishing process, said thickness measurement device being positioned at the outer peripheral portion of said polishing table so as to be positioned below said substrate carrier holding the substrate in said polishing position; and

a second nozzle for providing water toward the surface of the substrate for cleaning the surface after being polished.

Claim 45 (Currently Amended) An apparatus claimed in claim 44, wherein said attitude control mechanism comprises ~~at least an electromagnetic coil and a drive circuit for energizing the electromagnetic coil~~ an X-axis friction sensor and a Y-axis friction sensor.

Claim 46 (Currently Amended) An apparatus claimed in claim 45, wherein the temperature of said first polishing liquid and said second polishing liquid ~~are is~~ controlled so as to keep a constant level.

Claims 47-48 (Canceled)

Claim 49 (New) An apparatus for polishing a substrate, comprising:

a substrate carrier having a lower surface for holding a substrate and bringing the substrate into contact with a polishing surface;

a polishing table having said polishing surface, the diameter of which is substantially 1.5 times the diameter of the lower surface of said substrate carrier;

a pivotal shaft for rotatably supporting the substrate carrier for movement to and from a polishing position, in which polishing position said substrate carrier is positioned such that a portion of the lower surface of the substrate carrier extends radially outwardly of the outer peripheral portion of said polishing table;

an attitude control mechanism for keeping said lower surface of said substrate carrier parallel with said polishing surface, said attitude control mechanism being operable to calculate a force applied to said substrate carrier based on a rotational moment and a direction of frictional force acting on said substrate carrier and a contact area where the substrate contacts said polishing surface; and

a thickness measurement device for determining an end point of said polishing process, said thickness measurement device being positioned at the outer peripheral portion of said polishing table so as to be positioned below said substrate carrier holding the substrate in said polishing position.

Claim 50 (New) An apparatus for polishing a substrate, comprising:

a substrate carrier having a lower surface for holding a substrate and bringing the substrate into contact with a polishing surface;

a polishing table having said polishing surface;

a pivotal shaft for rotatably supporting the substrate carrier for movement to and from a polishing position, in which polishing position said substrate carrier is positioned such that a portion of the lower surface of the substrate carrier extends radially outwardly of the outer peripheral portion of said polishing table; and

an attitude control mechanism for keeping said lower surface of said substrate carrier parallel with said polishing surface, said attitude control mechanism being operable to calculate a force applied to said substrate carrier based on a rotational moment and a direction of frictional force acting on said substrate carrier and a contact area where the substrate contacts said polishing surface.

Claim 51 (New) An apparatus claimed in claim 50, wherein said attitude control mechanism comprises an X-axis friction sensor and a Y-axis friction sensor.

Claim 52 (New) An apparatus claimed in claim 51, further comprising a liquid supply nozzle for supplying a polishing liquid during a polishing process, wherein the temperature of said polishing liquid is controlled so as to keep a constant level.

Claim 53 (New) An apparatus claimed in claim 52, wherein the diameter of said polishing table is substantially 1.5 times the diameter of the lower surface of the substrate carrier.